

The California Morbidity Survey

A Progress Report

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FOR SOME TIME now the California State Department of Public Health, as well as other agencies concerned with health, has been acutely aware of the lack of information regarding the health status of the population.⁴ This has been especially true in regard to current knowledge of general morbidity. Special studies have provided fragmentary data covering limited geographic areas for specific illnesses. In addition, some information has been forthcoming from death certificates and some on diseases for which reporting has been required. The sum total of all of these, however, has been far from comprehensive.

For these reasons the Department began, in 1948, to explore the possibilities of undertaking research in the measurement of general morbidity. Representatives of the California Medical Association, California Physicians' Service, Association of California Hospitals, University of California School of Public Health, Stanford University, California Conference of Local Health Officers, State Department of Employment, and the State Department of Industrial Relations agreed to serve as a Project Advisory Committee. A number of approaches were discussed. One of these would involve studies of special population groups or disease categories. This method, however, was subject to at least two serious objections. First, it is of limited value when the subject under investigation is the range of morbidity rather than a single disease or group of diseases. Second, the method would be too expensive. It was also decided that any attempt to obtain data on general illness through the vehicle of physicians' reports would result in an unreasonable demand upon the physicians' time and would, in fact, be unworkable.

After about two years of discussion and planning, the funds to begin the current project became available, in May 1950, through a grant from the National Institutes of Health. The investigation proceeded in two phases.

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• In May of 1954 the California State Department of Public Health began a one-year household sample survey covering the health status of the population of California.

Preliminary results from the survey indicate that chronic conditions cause approximately three-quarters of the disability in the California population, while acute conditions are responsible for the remainder. Acute upper respiratory tract disorders account for about half of the total disability from acute conditions. In the older population group, there is a greater amount of disability outside than within metropolitan areas. No significant differences in disability status appear between recent migrants to California and longer term residents.

Forthcoming results from the survey, answering more detailed questions, will provide information needed by a number of private and state agencies.

Phase One—The San Jose Study

Before starting the survey on a statewide basis, it was decided to pretest alternate methods in a limited area. The city of San Jose was selected for the pretest because it was an area in which the population was reasonably typical of the population of the state, the community was more or less self-sufficient with respect to medical facilities, and the area was large enough to permit the drawing of methodological conclusions. Accordingly, an intensive study was conducted in San Jose in the spring of 1952. The results of the San Jose household survey were compared with data gathered from hospital records and other medical records in order to test their validity.² Information gained from the study in San Jose led to the choice of the procedures to be used in the statewide project.¹

Phase Two—The Statewide Survey

The results of the San Jose pretest having proved satisfactory, the statewide morbidity survey began in May 1954 and was scheduled to continue for one year. It embraced a sample of 12,000 households or approximately 35,000 persons. Each week interviews are conducted with about 250 households throughout the state. For selecting the sample the State Health Department contracted with the United States

TABLE 1.—Number of persons disabled on average day by selected conditions (provisional data) May 1954-January 1955

Conditions	Estimated Number Persons per 1,000	Per Cent
All conditions	63	100
Chronic conditions*	46	73
Diseases	39	62
Effects of earlier injuries....	7§	11
Acute conditions	17	27
Upper respiratory†	7§	11
Gastrointestinal‡	2§	3§
Other	8§	13

*In addition to conditions such as heart disease, asthma, diabetes, etc., which are normally classed as chronic, this category includes any other conditions which have lasted three months or longer or which have caused chronic or repeated trouble.

Sixth revision International List Numbers: (†) 470-481. (‡) 048, 049, 482, 544.2, 543, 571, 784.1, 785.5 and 785.6.

§ Relative sampling error greater than 10 per cent.

Source: State of California, Department of Public Health, Bureau of Chronic Diseases, California Health Survey.

Census Bureau, since it appeared that this operation could be best performed by an agency experienced in large scale sampling.

The questionnaire that is used obtains information on all types of illness or injury. In addition, a substantial amount of demographic and social information is gathered, such as data on age, sex, marital status, occupation, urban or rural residence, and type of health insurance coverage.

Although data collection for the survey is not yet completed, it has been possible to obtain some preliminary illustrative data from the first 42 weeks of the survey, covering the period May 1954 through January 1955.

Table 1 illustrates the relative contribution of various broad categories of disease to total disability. Days of disability as counted in the survey include all days on which a person was kept in bed, kept from going out of doors, or otherwise kept from his usual activities because of illness or injury. Each day in the period, on the average, 63 of every thousand Californians were disabled. Of these, approximately three-quarters were disabled by chronic conditions. In addition to conditions such as heart disease, asthma and diabetes, which are normally classed as chronic, the "chronic conditions" reported here also include any other conditions which have lasted longer than three months or which have caused chronic or repeated trouble. The remaining one-fourth of the disabled were affected by acute conditions. Almost half of the persons disabled by acute conditions were disabled by acute upper respiratory diseases.

Table 2 indicates the average number of persons in broad age groups who were disabled by acute upper respiratory and acute gastrointestinal disorders on the average day in the period May 1954-June 1955. The proportion disabled by respiratory

TABLE 2.—Number of persons disabled on average day by all conditions, acute upper respiratory,* acute gastrointestinal disorders† (provisional data) May 1954-January 1955

Age	Estimated Number of Persons per 1,000		
	All Conditions	Acute Upper Respiratory*	Acute Gastrointestinal Disorders†
All ages	63	7§	2§
0-14 years	44	15§	2§
15-44 years	47	5§	2§
45-64 years	79	5§	2§
65 years and over....	179	4§	2§

Sixth revision International List Numbers: (*) 470-481. (†) 048, 049, 482, 544.2, 543, 571, 784.1, 785.5 and 785.6.

§ Relative sampling error greater than 10 per cent.

Source: State of California, Department of Public Health, Bureau of Chronic Diseases, California Health Survey.

TABLE 3.—Number of persons disabled on average day by metropolitan* and nonmetropolitan areas (provisional data) May 1954-January 1955

Age and Sex	Estimated Number of Persons per 1,000		
	Total	Metropolitan Areas	Nonmetropolitan Areas
All ages, total	63	61	72
Male	56	54	65§
Female	70	68	80§
0-14 years, total.....	44	45	41§
Male	44	44§	44§
Female	43	45§	37§
15-44 years, total.....	47	47	47§
Male	34	33§	39§
Female	58	58	55§
45-64 years, total.....	79	77	91§
Male	74§	74§	71§
Female	84§	79§	113§
65 years and over, total	179	163§	251§
Male	172§	155§	238§
Female	186§	169§	265§

*Metropolitan areas include the following counties: Alameda, Contra Costa, Fresno, Los Angeles, Marin, Orange, Sacramento, San Bernardino, San Diego, San Francisco, San Joaquin, San Mateo, Santa Clara, Solano. (See U. S. Bureau of the Census, U. S. Census of Population: 1950. Vol. II, Characteristics of the Population, Part 5, California, Chapter B. U. S. Government Printing Office, Washington, D. C., 1952, pp. v-vi, xvi.)

§ Relative sampling error greater than 10 per cent.

Source: State of California, Department of Public Health, Bureau of Chronic Diseases, California Health Survey.

disorders is substantially greater in childhood than in later life, while the proportion disabled by acute gastrointestinal disorders shows little variation with age.* These data suggest, of course, the operation of some immunity or exposure factor in acute upper respiratory disease, which is quite different from that in acute gastrointestinal disease.

Table 2 also indicates that approximately one-third of all disability during the first 14 years of life is due to acute upper respiratory conditions.

Table 3 compares the average daily disability in metropolitan areas, where about 80 per cent of Californians live, with that of corresponding age-sex groups in the nonmetropolitan (principally rural)

*Similar age differentials are observed when all respiratory and gastrointestinal conditions are considered, regardless of whether or not they caused disability.

areas in the state. In general, up to the age of 45 years, the disability rates are about the same in each area. Thereafter, average daily disability is greater for females in the nonmetropolitan areas, and after age 65 it is greater for males as well.

Table 4 examines the question as to whether there are differences in the health status of recent migrants to California, compared to long-term residents. At ages above 15 years, only slight differences in average daily disability appear between comparable age groups.

The findings here presented regarding the distribution of broad categories of illness within selected segments of the population is only a small sector from the range of materials which will emerge from the analysis of the California Health Survey.

It is anticipated that the statewide morbidity survey will bring to light facts which will be of great value in answering such questions as:

1. What are the major and minor causes of illness today in California?
2. How much time is lost from work because of rheumatism, heart disease, diabetes, home accidents?
3. How many persons are there in California who require partial or complete nursing care?
4. What changes in health status occur after age 65?
5. How does hospitalization experience vary by age, sex, veteran status, health insurance coverage, and other population characteristics?
6. What kinds and amounts of illness occur in the various occupational groups?
7. How are smoking practices related to selected types of morbidity?
8. What is the volume of medical care services in the population, and how are they distributed with regard to type of service, and place where medical attention is rendered?

The answers to these and other questions will aid physicians, voluntary agencies, and health departments in evaluating the progress being made in the reduction of specific diseases. Also, such information will yield indices of the health status of various population groups. Thus, morbidity information needs of a number of private and state agencies will be met.³

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REFERENCES

1. Allen, G. I., Breslow, L., Weissman, A., and Nisselson, H.: Interviewing versus diary keeping in eliciting information in a morbidity survey, *Amer. J. of Pub. Health*, 44:919-927, July 1954.

**TABLE 4.—Number of persons disabled on average day by length of residence in California* (provisional data)
May 1954-January 1955**

Present Age	Estimated Number of Persons per 1,000 —Last Move to California—		
	Total	1941 and Before†	After 1941
All ages	63	67	57
0-14 years	44	‡	‡
15-44 years	47	44	49
45-64 years	79	81	76§
65 years and over.....	179	177	186§

*The questions were: "Have you ever lived any place besides California, not counting time away at school or in the Armed Forces?" (If yes) "When did you last move to California?" (†) Or has always lived in California.

§Relative sampling error greater than 10 per cent.

‡Data not comparable.

Source: State of California, Department of Public Health, Bureau of Chronic Diseases, California Health Survey.

2. Belloc, N. B.: Validation of morbidity survey data by comparison with hospital records, *J. Amer. Stat. Assn.*, 49:832-846, Dec. 1954.

3. Breslow, L. A., and Ott, N. C.: The California statewide morbidity survey, *Calif. Health*, 11:161-164, April 1954.

4. Weissman, A.: California morbidity research project, *Amer. J. Pub. Health*, 42:711-716, June 1952.

APPENDIX

Definitions and Explanations

Source of data. Information on illness in the population of California is obtained through personal interviews of a weekly sample of households throughout the state selected by scientific sampling methods. The data for this report are based on the combination of 42 weekly samples, comprising about 10,500 households. The sample in Los Angeles County was doubled for sample weeks 27 through 38. Data presented are provisional, and are subject to sampling and other fluctuation.

Population coverage. The data presented relate to the resident noninstitutional population of California, exclusive of persons living on military posts. Thus, this report does not cover nonresidents of California, persons living on military posts, inmates of penal institutions, homes for the aged, infirm, and needy, mental institutions, tuberculosis sanitariums, and similar places.

Reliability of estimates. Since the estimates are based on a sample, they may differ somewhat from the figures that would have been obtained if all households, rather than a sample, had been interviewed, using the same questionnaire, instructions and interviewers. As in any survey work, the results are also subject to errors of response and of reporting.